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The Beer Drinking Theme

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Abstract Any discussion of drinking must begin with *the idea of fluidity inherent in liquid*. The origin of drinking is arising out of ingesting water. However, it is not water in itself that is of import, instead, it is its precondition for health and life. In the study of the beer-drinking theme in the Germania of Tacitus, drinking rituals at the *Symbel* have played a fundamental role. Beer or 'bior' of the Norse is a component of import in various Germanic cultures. It has remained the main topic for consideration of the beer-drinking theme in the *Hávamál*. Throughout history, it is the basis for all kinds of drinking cultures worldwide. Further, its mythological ideas have become accentuated through speech making which is reflecting important achievements in civilisation, knowledge acquisition and transfer. In lubricating civilisation processes, beer has been instrumental through which the past is flowing into the present. As will be shown, the root of intention is preserved in the native state, finalizing in *Conscience*. It implies an inner feeling and warning for being overcharged by excessive ale or mjöd drinking. The complementary root appears in the dimension of orientation. Its global state is *Bliss*, which means to reach a state of 'perfect' happiness.

Some Results of the Previous Study on Germanic Beer Drinking Patterns

At least since the times of Tacitus, beer became vital to all Germanic people in lubricating their socialization efforts, and thus Tacitus, according to *History of Beer* (2015), wrote disparagingly of the beer brewed and consumed by the Germanic peoples. There, it is stated that early Northern Europeans were familiar with fermenting grain as well as the consuming beer. In contrast to the rich cultural foundation of drinking vessels (Ward, 2001) verbal accounts of that time are sparse and dependent on an observers' acuity in listening and capacity of writing. By searching for sources for the rising of the Germanic civilizations, a first paper has been produced, based on the ideas of Tacitus concerning the beer-drinking pattern of the Germanic people and participation in immortality feasts (B. Bierschenk, 2016). As acknowledge by Bauschatz (1982, p. 9) the Germanic tribes have focussed on the social significance of the *Symbel*. In addition Zuring (2013, p. 3) attributes to the *Symbel a sense of commitment to the lord who gave the gift of drink.*

When an author of the reception literature like Zuring (2013) is attributing certain properties, e.g., sobriety or commitment, to the drinking patterns of the Germanic people, it means that properties are added to a text from outside and on the basis of a general frame of reference (Martínez, 2010). In contrast, the present study of the beer-drinking theme, put forward by Tacitus, has been focussed on the internal text dynamics and therefore the frame of reference is the Classical Latin itself. By processing a text written in Classical Latin directly, i.e., without any interpretation filter, it has become evident that its roots relate to the discovery of (1) *Retrial*, which is the final state attractor in the dimension of intention, and (2) *Participation*, which is the final state attractor in the dimension of orientation. Both roots are essential for imaging the *ritualized drinking patterns*, which are developing at occasions when decisions are to be reconsidered. The men and only the men who are taking part in the *Symbel* are associated partakers. However, beer is lubricating the associations formed by the

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men at table. In considering the utility of their bonds and actions after the drinking event, decisions become open for critical judgement, which may require *Retrials*.

Conclusion:

To repeat, liquids are in use in all cultures and alcoholic beverages are judged to be beneficial for the development of creativity and adaptive social mechanisms. Especially beer-drinking is a recursively appearing element at all gathering occasions (Bauschatz, 1982, p. 135). Germanic beer-drinking rituals at the *Symbel* are observed and discussed by Tacitus who has described them as important rituals in the Germanic cultures. Further, beer brewing is rooted not only in cereal grain but also and foremost in the cultivation of beer drinking that seems to link feasts with the emergence of growing societies.

In light of the presented analysis, a fundamental fact is emerging, namely that all living systems and behavioural outcomes contain their own description (Pattee, 1980, 1982). Thus, independent of the language used, an operational analysis of the *native* properties of a text document must obey natural law. Thus, treating language as living system has made it possible to specify partly the ingrained intention, partly the entrenched orientation.

Invariants of their established concentration spaces have emerged through an evolutionary search for motifs and themes in complex energy landscapes. The search builds on the assumption (1) that natural law, governing the development of intention, must be recognised at the individual level, and (2) that natural law together with the selected materials furnishes an adaptation to complex systems and non-linear dynamics.

Norse Spirit

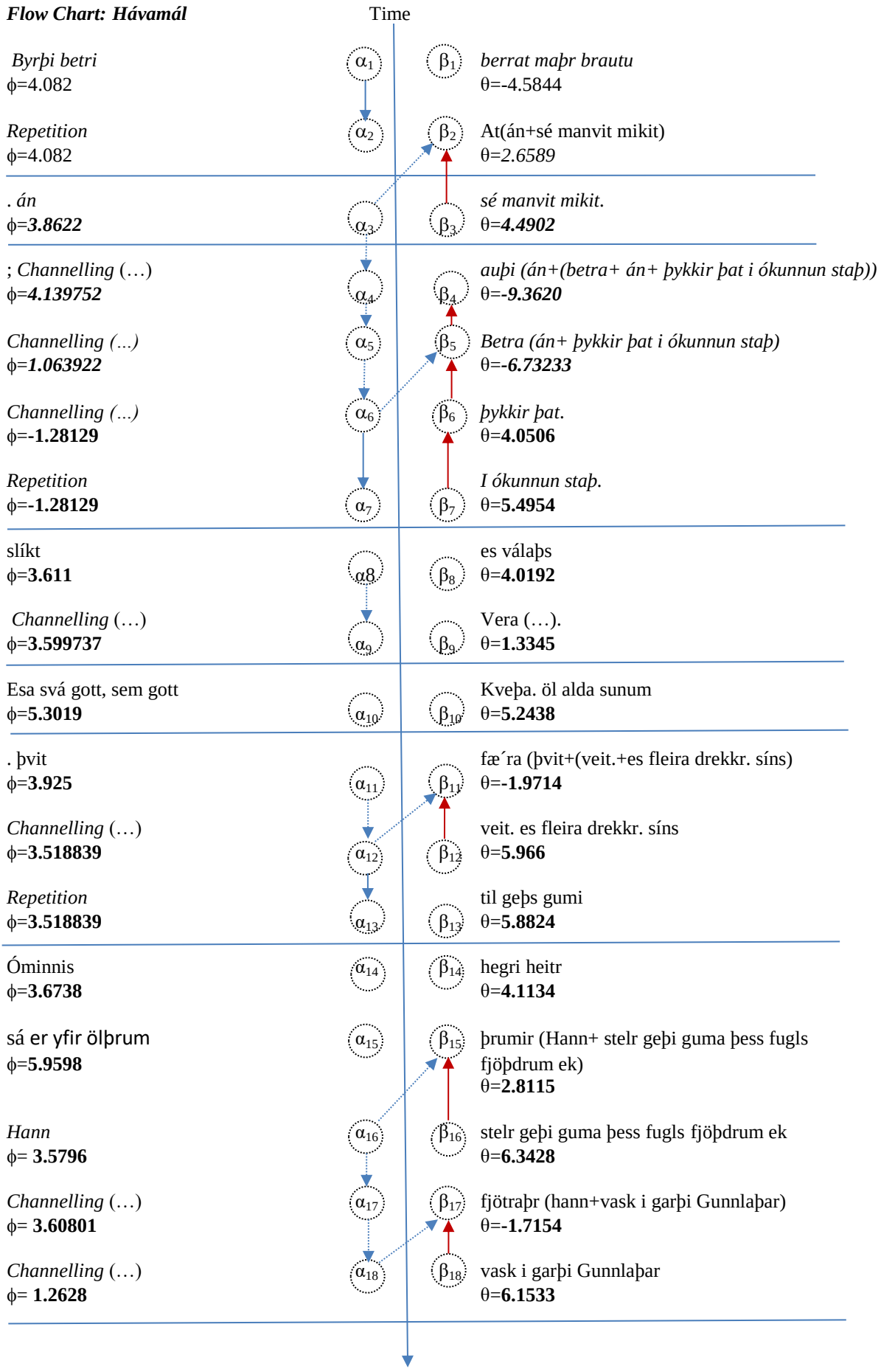
According to Icelandic sources, the remark of the god Óðinn seems to require that the participant at ale or mjöd gathering events adhere to good standards, which would lend a certain neatness and formality to one's feast behaviour. As stated in *Hávamál***,** Good sense should prevent a participant of a drinking feast to carry mjöd with him because over-drinking prevents one from moving. In focussing particularly on drinking and good sense, the selected stanzas 10 to 14 comprise a set of behavioural advices of practical value. Table 1 contains their reproduction.

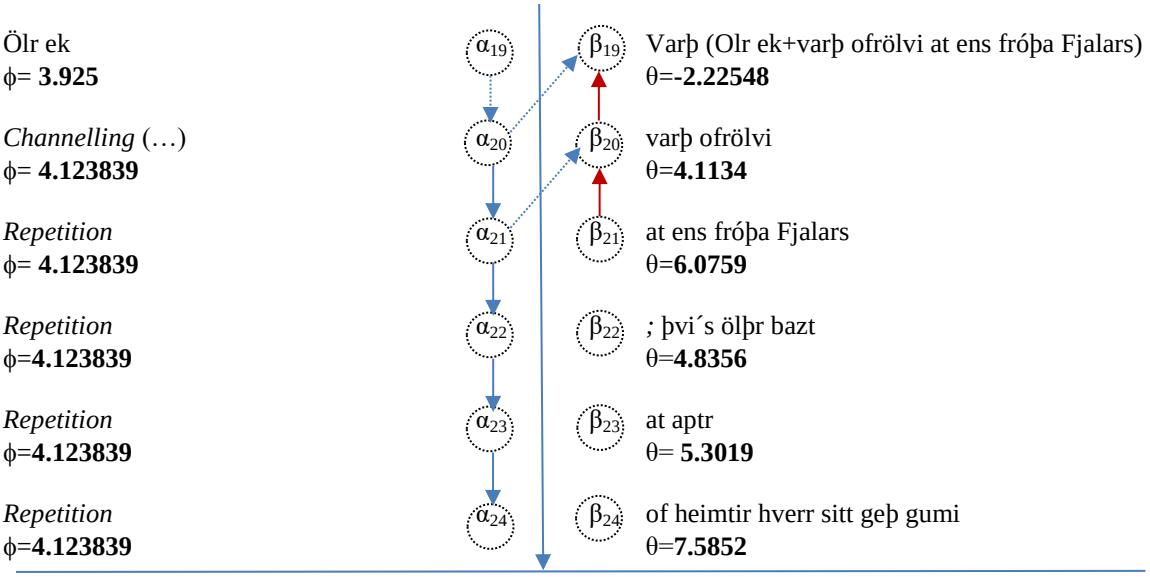
Table 1

Behavioural Advice in the Sayings of the High (Henry Adams Bellows, 1936)

10.	11.	12.	13.	14.
Byrði betri berrat maðr brautu at en sé manvit mikit auði betra þykkir þat í ókunnum stað slíkt es válaðs vera	Byrði betri berrat maðr brautu at en sé manvit mikit vegnest verra vegra hann velli at an sé ofdrykkja öls	Era svá gótt sem gótt kveða öl alda sonum því at færa veit er fleira drekkr síns til geðs gumi	Óminnis hegri heitir sá er yfir öldrum þrumir hann stelr geði guma þess fugls fjöðrum ek fjötraðr vask í garði Gunnlaðar	Öl ek varð varð ofrölvi at hins fróða Fjalars því er öldr bazt at aptr of heimtir hverr sitt geð gumi

By looking at the stanzas from **inside** as well as in a holistic way means putting one's focus on individual energy investments. Since this requires a stepping function to be applied in the materialisation, cyclic returns will be showing that the stepping function exerts phase dependent pressures, which are producing bi-componential Agent and Objective disparities. For the resulting patterns, magnitude and direction need to be calculated and presented in the form of Potential Energy Surfaces (PES). As a first measure for observing individuality in the produced movement patterns, the following *Hávamál Flow Chart is required*:


Flow Chart: Hávamál
Time
Byrþi betri
ϕ=4.082
Repetition
ϕ=4.082
. án
ϕ=3.8622
; Channelling (…)
ϕ=4.139752
Channelling (…)
ϕ=1.063922
Channelling (…)
ϕ=-1.28129
Repetition
ϕ=-1.28129
slíkt
ϕ=3.611
Channelling (…)
ϕ=3.599737
Esa svá gott, sem gott
ϕ=5.3019
. þvit
ϕ=3.925
Channelling (…)
ϕ=3.518839
Repetition
ϕ=3.518839
Óminnis
ϕ=3.6738
sá er yfir ölþrum
ϕ=5.9598
Hann
ϕ= 3.5796
Channelling (…)
ϕ= 3.60801
Channelling (…)
ϕ= 1.2628
α1
α2
α3
α4
α5
α6
α7
α8
α9
α10
α11
α12
α13
α14
α15
α16
α17
α18
β1
β2
β3
β4
β5
β6
β7
β8
β9
β10
β11
β12
β13
β14
β15
β16
β17
β18
berrat maþr brautu
θ=-4.5844
At(án+sé manvit mikit)
θ=2.6589
sé manvit mikit.
θ=4.4902
auþi (án+(betra+ án+ þykkir þat i ókunnun staþ))
θ=-9.3620
Betra (án+ þykkir þat i ókunnun staþ)
θ=-6.73233
þykkir þat.
θ=4.0506
I ókunnun staþ.
θ=5.4954
es válaþs
θ=4.0192
Vera (…).
θ=1.3345
Kveþa. öl alda sunum
θ=5.2438
fæ´ra (þvit+(veit.+es fleira drekkr. síns)
θ=-1.9714
veit. es fleira drekkr. síns
θ=5.966
til geþs gumi
θ=5.8824
hegri heitr
θ=4.1134
þrumir (Hann+ stelr geþi guma þess fugls fjöþdrum ek)
θ=2.8115
stelr geþi guma þess fugls fjöþdrum ek
θ=6.3428
fjötraþr (hann+vask i garþi Gunnlaþar)
θ=-1.7154
vask i garþi Gunnlaþar
θ=6.1533



In departing from the biophysical hypothesis that the Agent-action-Objective [AaO] principle takes account of reversibly synthesizing rotary mechanisms, it is suggested that one or more A- and O-components rotate against the others. By means of the Flow Chart, separated [A] and [O] components become approachable and cycles of integrated movement patterns become specifiable. The reproduction of intervals and radians for the corresponding alpha and beta variables is summarized in Table A2 of the Appendix. As shown in the shape of the Agent surface in Figure 1, the A-strand is exhibiting its greatest increase in shade in the third interval.

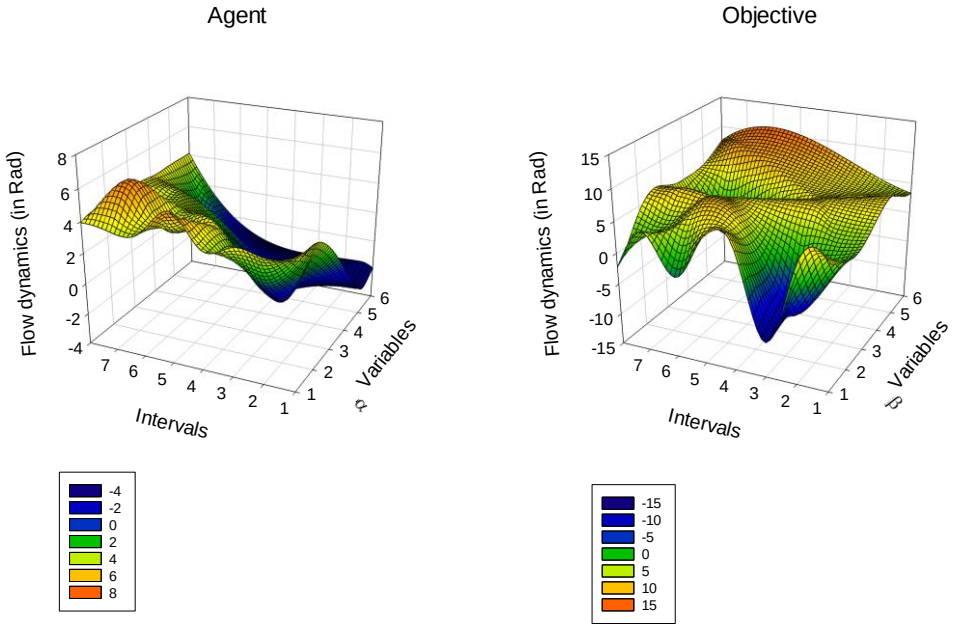


Figure 1 *Potential Energy Surfaces (PES) of Agent and Objective*

However, unless the individual steps, making up the entire path, can be related to intention, bi-componential disparity cannot be accounted for with precision and represent an analysis of the true shape of a taken path. By means of PTA/Vertex, the resulting landscapes are shown to be far more than just the clocking of a component and an analysis of rhythms.

In *Hávamál*, an 'I' reference can be found which makes Óðinn known as the beer drinking Agent. Moreover, getting the Agent [A] of the [AaO] model under control presupposes that lawful relations can be established and discussed with a focus on convoluted topological structures. To begin with, the *Hávamál Flow Chart*, the repetition of (α_1) in the first interval, of [A] provides the basis for its replication and transfer into the position (α_2). Within the conceived set of specifying conditions, this procedure implies that the value of (α_1) reappears without alteration of the textual agent. The graphical computation of the textual equations has shown that the governing α-variable is repeated whenever two or more β-variables appear within the same action (verb) range. Furthermore, repetition of a grapheme-configuration leaves the winding factor unchanged. Especially the repetitions in the last interval have shaped its plane surface. Founded on their lawful relationship, the condition is determinative for settling the first interval on a developing time-line as well as for a clarification of the boundary conditions for the emergence of the textual energy flow.

In contrast, by channelling the energy, preserved in (α_3) into (α_4), its disc is indicating that this process implies the calculation of the (ROT (α_3)) which is the root of the immediately preceding textual agent. The same kind of reiterative copying reappears twice, however, now involving (α_5) and (α_6) whose root is indicated in position (α_7). By computing the roots in both cases means *shading* which is competing with the original expression.

Shading is primarily a function of extensive 'rooting', of the (α) variable and hence, the definition of a part of the [A] component that develops from the radicle and grows or fades downward into the conceptualization which anchors [A] and absorbs energy. The effect of both repeating and channelling the (α) variables in the last interval has changed the direction of the developing path towards the plateau at the level of the value of the initial variable. Since the spin structures of the (α) variables as well as the (β) variables are always winding and developing in certain directions, unwrapping an energetic potential means unfolding their surfing and rolling waves.

In contrasting the path of the Agent component with the path of the Objective component, it turns out that refraction for the first time is observable in (β_2) which is the variable which is defined by a value of (θ=2.6589). Channelling is addressing the root and thus is changing the winding factor. The complementary property in the second variable (β_2) of the first interval suggests that (α_3) is contributing to the shading in the (β_2) variable. Thus, when a change enters into the process, it is also changing the course of the winding path. How this difference has influenced the angular articulation is materialized through the (β_3) variable, which seems to account for substantial differences on the Objective side. Accordingly, the twinned and twisted grapheme-composition has rendered a certain direction in focus as well as in orientation and the appearance of a deep embedding of the *'Unbridled'* in (β_4) of the third interval is the result.

Thus, angular articulations have produced complementary shapes whose basin property suggests that the depth in an articulation is carrying certain functional requirements. In that the shape of a rolling wave becomes helically the shape is shown to buckle because of the resulting magnitude in the underlying composites of (β_6, β_7). A higher degree of embedding has shaped a hyperbolic space and influenced the operations, which have changed the orientation in the wave function towards a saddle.

This means that every step in the repetition process leaves behind a *mark of itself* that has an effect on the rise and fall of the wave function. The resulting wave in the Objective shows higher degrees of acceleration. When determined from the displacements of the β-variables, drifting over the intervals is changing the fundamental phase relation several times. Any time a deep is followed by an equally pertinent height, for example associated with variables (β_6, β_7 and β_8), increasing rotational distances in the course of the path is generating

substantial basin relations. However, speeding up the process is again followed by an acceleration which is resulting in a new sliding towards the second (θ=-9.3620) and third (θ=-6.73233) basin. Moreover, the trajectory has become extended and it has thereby generated differences in depth. Thus, the changes in the Objective are connected with a dramatically rolling wave meanwhile the changes in the wave of the Agent appear to be more speedy and calm.

Determination of State Attractions

In time-dependent measurements, at least one isolated phase singularity may arise in a simultaneously evolving state space and constitute the source for the naming of the concentrated information, associated with the emergent singularity. A relation in a state space must incorporate both the state and the dependency relation between state and singularity. Their determination is dependent on the making and breaking of symmetries at the lower levels. When a singularity at the kinematic level appears as a state attractor, which is forming at a certain given point in time, the attractor represents the local concentration of conserved energy, which is associated with the information carriers at the kinetic level. Hence, named relations make apparent that irreversible processes appear as constraints at the kinematic level.

Moreover, when text constitutes the context, the co-operation between intention and orientation is no longer the objective of the physical conditions of making experience. Instead, it is the hyperbolic determination that comes into focus. Thereby, new constraints emerge, which pass beyond the limits of reality. Hence, attractions are evolving in workspaces that have the hyperbolic property of intrinsic as well as extrinsic curvatures (Wisdom, 2003). By organising themselves in hyperbolic spaces which are negatively curved they are by definition negatively curved spaces and hyperbolic at any level. This requires that ordinary geometry be replaced by non-commutative geometry (Connes, 1994 p. 7; Greene, 1999, pp. 379-380; Hestenes, 1994, p. 66). The consequence of transcending physical reality will be reflected in evolving fitness landscapes. These are the consequences of non-commutative measurements. As a result, the thermodynamic approach provides an alternative description of language embedded structures, which has important implications for hypothesis testing and theory construction.

Fusion dynamics in the Objective component

Synthesis and the order (i.e. relationship) of information invariants imply that the information concerning Óðinn's advice becomes abstracted and communicated through an adaptive landscape. Maintenance of its non-equilibrium properties through symmetry-breaking operations allows the manifestation of context-embedded structures, which are producing the unique properties of a landscape of mountains and valleys.

The magnitude of the depicted and named state attractors is from a geographic point of view characterising regions, which are manifesting particular or novel thematic changes. In climbing on a path, apparent strong bottlenecks may imply rational firmness and the corresponding region may therefore be comprehended as a depiction of the processing of sophisticated differences in reasoning. Since each region is building up its own unique progress, each microstructure will reflect at its tip a conclusive state attraction. Besides the capacity to work towards thematic unification, they will eventually converge on the global or final state attraction. Besides the attractions, associated with the named places in the landscape, its geometric pattern of mountains and valleys marks the entire geography.

The theoretical significance of applying invariant mesh systems relates to the way in which the concentration of information within a space has its impact on the evolving fusion dynamics. In contrast to the X-axis of the fluidity space, the X-axis of the concentration space

is responding to the *Strain*, while the Y-axis, instead of carrying the intervals, is now specifying *Shear*. Furthermore, the Z-axis is, instead of carrying the flow dynamics, related to the fusion dynamics. The coordinates, made up by the strain- and shear-dimensions refer to the underlying mesh system of the dependency graph with non-fixed measurements, shown in Figure 2.

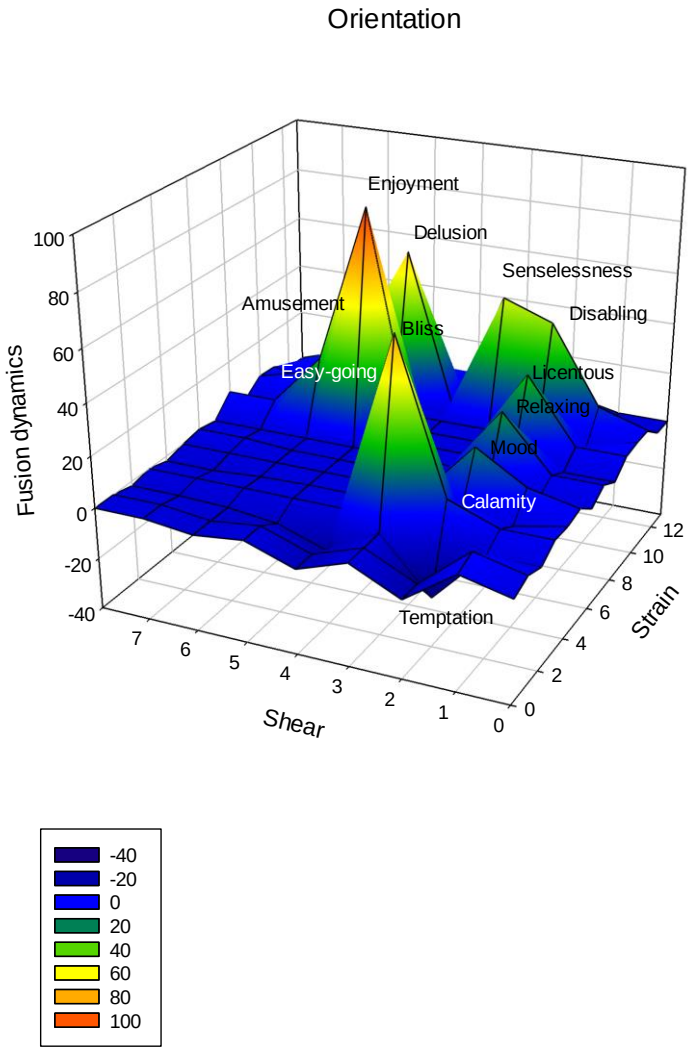


Figure two *Named Attractions in the Orientation Space*

In turning to the differences between the regions in the Orientation space, it becomes evident that the result of a single region deviates in some important aspects from any other region. Hence, crossing a path from one region with the path of another one is strictly controlled by the thermodynamic properties of its defining attractions. In this sense, the closeness of an assigned name is decisive to a particular region.

As shown in Table A3 of the Appendix, once a new state attractor has come into existence, its transformation through successive transitions is imposing rigour on the process of naming and generates the specificity of the information associated with the evolving attractors. The same condition applies to the other names, which makes the fusion time-dependent and transforms the entrenched attractions irreversibly into a unified path. To

paraphrase Mackenzie (1998), the validity of the computational solution comes from text processing itself, but requires always the presence of a structured context. To repeat, workspaces are the consequences of processing. As a logical consequence, a partial solution to the text becomes determined by the structure, embedded in the landscape of orientation.

The final attraction is manifested in the emergence of a sense of potency, which terminates in the final state attraction, at (X=3, Y=3) and a fusion value of about 69. The resulting name of this final attractor is ***Bliss***. Thereby a state of perfect happiness is reached and a distinct presence of oblivious comes to the fore, typically to be oblivious of everything else. This state not only underlines that the individual is not aware of or not concerned about what is happening around him. Hence, obliviousness underlines one's absent-mindedness about one's contact with one's own actuality, i.e., one's sensory experience.

The rockiness of the final concept on the path follows from the direction of influence, namely *Enjoyment at* (X=8, Y=5) (with the value of 90) transformed by *Temptation* at (X=2, Y=2) (below sea level = -21) which is building up the concept in modular fashion. Coming to this result must have involved adaptability in ego-motion as essential constituent of the *Mind*.

By approaching the *Mind*, ego-motion appears to be embedded by *Enjoyment*. This state of attraction defines geographically the high-rise of the mountain and thus a side of sensation that has evolved through a transformation of *Easy-going at* (X=8, Y=6) through *Delusion* at (X=11, Y=5). When measured against the energy invested in disorderly behaviour, it takes a lot of courage to unmask the disturbing behaviour of others and to discover the sources for failing to meet fitting priorities.

Here, soft relaxation and letting thoughts flow seem to fill the gap with *Amusement* (X=10, Y=6) Becoming *Helplessly Drank* (X=12, Y=7) is transformed by means of *Hindsight* at (X=10, Y=7) which is letting emotions settle down into *Easy-going* at (X=8, Y=6) become situationally an expression of *Humour* at (X=8, Y=7). However, the immediate implication is a loss of noble-ness and consequently the appearance of ignoble behaviour, which may lead to a *Calamity* at (X=three, Y=2) of one's authenticity. Hence, *Calamity* implies an alteration of one's original mental acuity and is obviously the result of strain or tension, which transforms the state of *Senselessness* at (X=11, Y=3) into a dream-like form, i.e., an illusion.

Conclusion

Bliss as the root of orientation refers to the decent dimension and its significance for possible problems concerning the drinking patterns of Northern people. By paraphrasing individuality as the expression of Óðinn's guidance, responsibility is uncovered by the naming procedure. By getting *Licentious* (X=nine, Y=2) under social control, a reference is made to the individual's *Relaxing* (X=7, Y=2) in agreement with accepted rules of conventions. This would also imply the recognition that decent behaviour is dependent on the Mood (X=five, Y=2) or state of drinking in which the partaker of a feast is at the time of the actual drink. Hence, the underlying fusion dynamics in the orientation space builds on the differences between intrinsic human values on one side and the possibly negative emotional effects of drinking on the other which may result in *Senselessness* and thus in *Disabling* (X=11,Y=2) that may corrupt one's mind through the production of illusions.

Fusion dynamics in the Agent component

In the resulting Intention landscape, the invariants are pointing towards the presence of a bio-kinetically determined interplay between the state attractors. Through the causal relationship between the underlying configurations of intention and orientation, information specificity, manifested through the naming in the orientation space, makes evident that bi-componential rotations can be determined and used to demonstrate uniqueness in the

formation of the descriptors of the Intention space. As mentioned previously, the functional asymmetries between [A] and [O] components have been established and reproduced in Table A3. The extraction of the descriptors for the invariants of the Intention space is reported in Table A5. Through individual variations in the formation of intention, it is shown that structural stability in its morphogenesis is generating corresponding invariants. For the [A] component, the operating function has generated the shape shown in Figure 3.

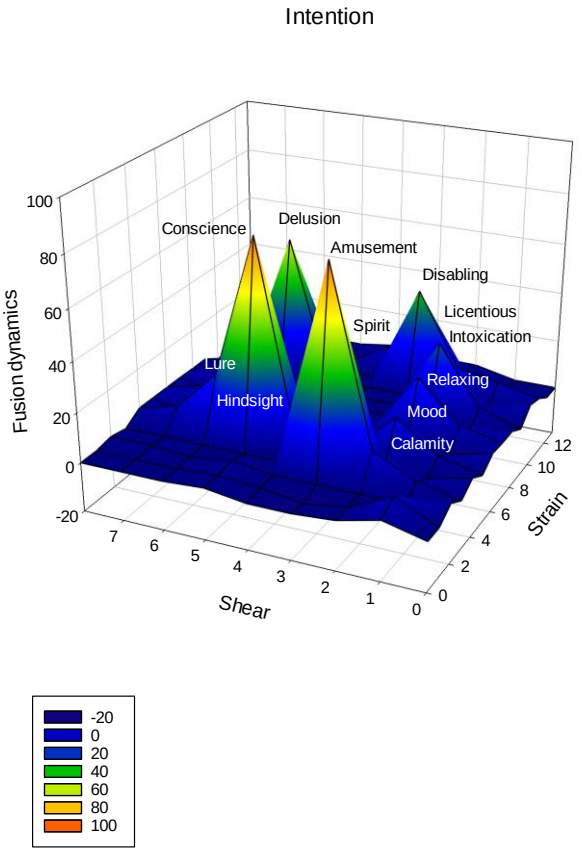


Figure 3 *Descriptions of the Attractions in the Intention Space*

Through a continued cyclic extraction of the names from the configuration in the Orientation space, it is demonstrated how the extracted names are working in the Intention space and how they contribute to the description of a transformed articulation potential. The dependency relation between both underlying mesh systems makes full use of the articulation, reflected in Table A1 of the Appendix. Corresponding coupling and extraction processes are depicted in Table A5 of the Appendix. Thus, time-directed processing is generating properly incorporated termini. This peculiarity is effectively contributing to reprocessing and refinement of the characteristic quality of the configuration in the Intention landscape.

By climbing to the top of the mountain in Figure 3, the end of the path is reached at (X=six, Y=5), which is characterising the highest point on the path at the left-hand side. By concentrating on the inner feeling, as acting guide the established ***Conscience*** is the global of final attractor and a measure on the root of intention. Rather than becoming destructive at a drinking gathering event the root should be recognized as a constructive means which directs one's reactions to *Lure* (X=2,Y=7) procedures. The focus here is on something that tempts or

is used for attempting a participant to do something for getting an award by the offer of more drinks.

Thus, the principle of *Conscience* is preserved in Havamàl, since *Amusement* at (X=four, Y=5) would imply the intake of an excessive quantity of mjöd. Although mjöd drinking is respected in *Hávamál*, drunkenness appears to be denounced despite boasts. In concentrating on the neighbouring state attractor, it becomes clear, that *Delusion* (X=10,Y=6) in the background of the Intention dimension gives expression to drinking which eventually may result in drunkenness. However, a deranged awareness due to drunkenness is almost absent in the context of the *immortality feasts* of the Germanic people (Zuring, 2013, p. 3).

With reference to the *Spirit* (X=13, Y=4) in the *Hávamál*, any judgement on intoxication (X=11, Y=2) in relation to *Licentious* (X=9, Y=2) is accessible only to the degree that it can be reflected through *Hindsight* (X=6, Y=7), which concerns the individual's angle of inclination. The degree of precision in the corresponding intention is assumed to co-vary with the strength in *Conscience*. The state of *Relaxing* (X=7, Y=2) is determining one's pleasure in a drinking feast and the *Mood* (X=5, Y=2) and thus the temporary state of feeling. However, an overload in drinking may easily render *Calamity* (X=3, Y=2), i.e., a condition that is resulting in a situation where the drinking individual is flooded, overwhelmed and swept away by the passed intoxication.

At the top of mountain at the right-hand side has a state attractor appeared that points towards a warning concerning the pleasure in drinking. Therefore, the descriptor *Disabling* (X=11, Y=3) appears as a banner of caution against unrestrained drinking which may as well lead to drunkenness. At a minimum, *Disabling* is pointing towards the fact that one's appreciation of mjöd would come to intentional *Delusion* (X=10, Y=6). The latter is taken to reflect a flawed self-awareness. Despite some scepticism, the importance of drinking as ritual key to an understanding of the Germanic way of living was *not considered in any way disgraceful* (Bauschatz, 1982, p. 66).

Since the times of Tacitus, drinking customs at the *Symbel* were over centuries very similar in their rituals. Therefore, what follows is a comparison, which is expected to reveal the conceptual differences between Tacitus' observations on Germanic drinking cultures and the ideas about drinking, reflected in *Hávamál*. How Tacitus has appeared to anchor the Germanic *gheis* in the drinking culture is reflected in the roots, reproduced in Table 2.

Table 2
Final State Attractions

Source	*Intention*	*Orientation*
Tacitus	***Retrial** (Reconciliation)*	***Participation** (Agreement)*
Havamàl	***Conscience***	***Bliss***

As a result, it will become possible to propose an explanation of the observed changes that have occurred over about 700 to 800 years. In the case of the Tacitus report, the roots do not refer to any unworldly (Heathen) practice but instead the roots must be understood as pertaining to obviously social realism (B. Bierschenk, 2016). With respect to the root in the orientation dimension, the members at the *Symbel* are bound together by their agreement to the words spoken or speeches made. However, according to Wills (2012), a fellow may refuse to take on the responsibility to give a speech until gifts have been exchanged and the opportunity is given to reconcile that what may have been humiliating or angering so that the balance in the assembly is restored.

In the case of *Hávamál*, the root of orientation refers to an individual who should be in control of his mind. Losing control would lead easily to bad drinking experiences what, however, would not happen in a sober, i.e., in a controlled state. Ward (2001, p. 1) concludes that *the drinking of alcoholic beverages was a prominent feature of Scandinavian life in the Viking Age*. What is problematic in the *Hávamál* context would be the intention to impair oneself by *Intoxication* (=overdrinking), as Óðinn did in connection with his visit in 'Gunnlögs Gård', even though this state could be repaired. Therefore, the advice offered is that one should observe moderation in the drinking of mjöd.

In his paper on Norse drinking traditions Ward (2001, p. 1) has collected evidence from several Germanic cultures and concludes that there exist some differences but on the whole many similarities are observable in the beer drinking patterns of the Germanic people. Drinking practices as a formal ritual activity as well as attitudes towards drinking have been influenced by many different cultural preferences. However, northern European drinking patterns occupy a particularly significant position in Scandinavia, the Netherlands, Britain and Germany. For these people, some roots for guidance have been provided by the presented perspectivation of *Hávamál*. From the intentional point of view, the words of the great god Óðinn are cautioning against *Disabling* through unrestraint drinking and drunkenness.

Discussion

Wisdom in the Norse literature consists of a mixture of Latin proverbs and Heathen values, which are brought together in *Hávamál*. In a sense, the poem consists of the *Sayings of the High*, which provide an insight into universal values, and hence applies to all people across the world (Dumézil, 1924). The decision to study the Spirit in the stanzas 10-14 of *Hávamál* is based on an ambition to grasp the conscience of the Northern people concerning their drinking behaviour. Within the Pagan world of the Vikings, wisdom appears to be rooted in the belief of the value of the individual. Concentrated in individual responsibility, i.e., *Conscience*, everyone is responsible for his own life, has the obligation to shape his own fortune and to create the life he wants to live (Bellows, 1936). Thus, the old Germanic nouns ('Zit', 'Zeit') are precisely those utterances that are addressing the import of time in the transformation of knowledge and skills (Friðriksdóttir, 2012, September). This kind of backing up excellence, political knowledge and guidelines for effective action is captured in the old Germanic word ('gheis').

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Appendix

Manuals

Bierschenk, I., & Bierschenk, B. (211). Perspective Text Analysis: Tutorial to Vertex. *Cognitive Science Research*, 1. Copenhagen University & Lund University.
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Tables

Table A1 *AaO Coding and Computation of Radians*
Table A2 *Intervals and Radians of Alpha and Beta Variables*
Table A3 *Transformation of Beta Variables*
Table A4 *Transformation of the Alpha Variables*
Table A5 *Extraction of Termini from the O-mesh*

Table A1
AaO Coding and Computation of Radians

Code	*String*	*Count*	*Int*	*Calc*	*Base*	*Sum*		*Meaning*
30	byrþi	5	1	0.471				Burden
30	betri	5		0.471				better
				0.942	3.14	4.082		
40	berrat	6		0.5024				carries
50	maþr	4		0.4396				man
50	brautu	6		0.5024				no away
				1.4444	3.14	4.5844		
60	at	2		0.4644	6.28	6.7444	2.658943	at
	*							
0.1	,	1	2	0.3454				
30	án	2		0.3768				without
				0.7222	3.14	3.8622		
40	sé	2		0.3768				is
50	manvit	6		0.5024				discretion
50	mikit	5		0.471				great
				1.3502	3.14	4.4902		
0.1	;	1	3	0.605	5.5	6.105	4.139752	
30	*							
40	auþi	4		0.4396				let
50	*				6.28	0.4396	-9.362	
0.1	*							
30	*						1.063922	
40	betra	5		0.471	6.28	6.751	-6.73233	improve
50	*							
30	*						-1.28129	
40	þykkir	6		0.5024				think
50	þat	3		0.4082				it
				0.9106	3.14	4.0506		
60	i	1		0.4257				in
60	ókunnun	7		0.6579				unknown
60	staþ	4		0.5418				place
				1.6254	3.87	5.4954		
0.1	,		4					
30	slíkt	5		0.471	3.14	3.611		such
40	es	2		0.3768				is

50	válaþs	6		0.5024				seamy
				0.8792	3.14	4.0192		
0.1	*							
30	*						3.599737	
40	vera	4		0.3925				be (stay)
50	*							
0	.	1		0.157				
				0.5495	0.785	1.3345		
30	Esa	3	5	0.4082				
30	svá	3		0.4082				so
30	gott	4		0.4396				good
0.1	,	1		0.3454				
30	sem	3		0.4082				that
30	gott	4		0.4396				good
				2.4492	3.14	5.5892		
40	kveþa	5		0.471				provide
0.1	,	1		0.3454				
50	öl	2		0.3768				öl
50	alda	4		0.4396				bara
50	sunum	5		0.471				south
				2.1038	3.14	5.2438		
0.1	,	1	6	0.3454				
30	þvit	4		0.4396				therefore
				0.785	3.14	3.925		
40	fæ´ra		5	0.942	6.28	7.222	-1.97142	move
50	*							
0.1	*							
30	*					3.518839		
40	veit			0.3454				know
50	*							
50	,	1		0.3454				
50	es	2		0.3768				es
50	fleira	6		0.5024				more
50	drekkr	6		0.5024				drinks
0.1	,	1		0.3454				
50	síns	3		0.4082				his
				2.826	3.14	5.966		

60	til	3		0.5031				to
60	geþs	4		0.5418				gethin
60	gumi	4		0.5418				honour
0	.	1		0.4257				
				2.0124	3.87	5.8824		
30	Óminnis	7	7	0.5338	3.14	3.6738		Forgetfulness
40	hegri	5		0.471				cranes (hegra)
50	heitir	6		0.5024				hot (värma)
				0.9734	3.14	4.1134		
0.1	sá	2		0.4644				that
30	er	2		0.4644				I
(30)60	yfir	4		0.5418				over
(30)60	ölþrum	6		0.6192				öl
				2.0898	3.87	5.9598		
40	þrumir	5		0.942	6.28	7.222		svävar
50	*						2.811525	
0.1								
30	hann	4		0.4396	3.14	3.5796		he
40	stelr	5		0.471				shoplifting
50	geþi	4		0.4396				wits
50	guma	4		0.4396				men
50	þess	4		0.4396				that
50	fugls	5		0.471				fowl
50	fjöþdrum	8		0.5652				feathers
50	ek	2		0.3768				I
				3.2028	3.14	6.3428		
0.1	*							
30	*					3.608017		
40	fjötraþr	7		1.0676	6.28	7.3476		
50	*					-1.71538		
0.1	*							
30	*				5.5	1.262809		
40	vask	4		0.5418				snattar
60	i	1		0.4257				in
60	garþi	5		0.5805				garden
60	Gunnlaþar	9		0.7353				Gunn attracts

				2.2833	3.87	6.1533		
0.1	*							
30	Ölr	3	10	0.4082				Öl
30	ek	2		0.3768				I
				0.785	3.14	3.925		
40	varþ			0.4396	6.28	6.7196	-2.22548	was
50	*							
0.1	,	1	11	0.605	5.5	6.105	4.123839	
30	*							
40	varþ	4		0.4396				was
50	ofrölvi	7		0.5338				overdrunk
				0.9734	3.14	4.1134		
60	at	2		0.4644				at
60	ens	3		0.5031				fold
60	fróþa	5		0.5805				Wise
60	Fjalars	7		0.6579				Fjalar
				2.2059	3.87	6.0759		
0.1	;	1		0.3454				
50	þvi´s	5		0.471				thus
50	ölþr	4		0.4396				öl
50	bazt	4		0.4396				best
				1.6956	3.14	4.8356		
0.1	,	1		0.4257				
60	at	2		0.4644				at
60	aptr	4		0.5418				back
				1.4319	3.87	5.3019		
60	of	2		0.4644				of
60	heimtir	7		0.6579				home
60	hverr	5		0.5805				who
60	sitt	4		0.5418				his
60	geþ	3		0.5031				Gethin
60	gumi	4		0.5418				honour
0	.	1		0.4257				
				3.7152	3.87	7.5852		

Table A2
Intervals and Radians of Alpha and Beta Variables

Case	*Interval*	*Alpha*	*Beta*
1	1	4.0820	4.5844
2	1	4.0820	2.6589
1	2	3.8622	4.4902
1	3	4.1398	-9.3620
2	3	1.0639	-6.7323
3	3	-1.2813	4.0506
4	3	-1.2813	5.4954
1	4	3.6110	4.0192
2	4	3.5997	1.3345
1	5	5.5892	5.2438
1	6	3.9250	-1.9714
2	6	3.5188	5.9660
3	6	3.5188	5.8824
1	7	3.6738	4.1134
2	7	5.9598	2.8115
3	7	3.5796	6.3428
4	7	3.6080	-1.7154
5	7	1.2628	6.1533
1	8	3.9250	-2.2255
2	8	3.9250	4.1134
3	8	4.1238	6.0759
4	8	4.1238	4.8356
5	8	4.1238	5.3019
6	8	4.1238	7.5852

Table A3
Transformation of Beta Variables

X	*Y*	*Node*	*Value*	*Transformation*	*English*
0	*0*	*0*	*0*		
1	*0*	*1*	*4.5844*	*Berrat maþr brautu*	*No man can bear*
1	*0*	*2*	*2.6589*	*At(án+sé manvit mikit)*	*At(and no worse provision)*
1	***1***	***T_1***	***7.2433***	***Ómannlegri hlaða***	***Inhuman Load***
3	*0*	*D*	*0*		
4	*0*	*3*	*4.4902*	*Sé manvit mikit*	*And no worse provision*
4	***1***	***T_2***	***4.4902***	***Óæðri viðbúnaður***	***Inferior Preparedness***
1	*1*	*T_1*	*7.2433*	*Ómannlegri hlaða*	*Inhuman Load*
4	*1*	*T_2*	*4.4902*	*Óæðri viðbúnaður*	*Inferior Preparedness*
3	***2***	***T_3***	***11.7335***	***Ógæfu***	***Calamity***
4	*0*	*6*	*4.0506*	*þykkir þat*	*Can he carry*
5	*0*	*7*	*5.4954*	*I ókunnun staþ*	*In an unknown place*
5	***1***	***T_4***	***9.5460***	***Óöryggi***	***Insecurity***
3	*2*	*T_3*	*11.7335*	*Ógæfu*	*Calamity*
5	*1*	*T_4*	*9.5460*	*Óöryggi*	*Insecurity*
5	***2***	***T_5***	***21.2795***	***Hugarástand***	***Mood***
6	*0*	*D*	*0*		
7	*0*	*8*	*4.0192*	*es válaþs*	*is the refuge*
7	***1***	***T_6***	***4.2076***	***Skjól***	***Shelter***

5	*2*	*T_5*	*21.2795*	*Hugarástand*	*Mood*
7	*1*	*T_6*	*4.2076*	*Skjól*	*Shelter*
7	***2***	***T_7***	***25.2987***	***Slökun***	***Relaxing***
8	*0*	*D*	*0*		
9	*0*	*10*	*5.2438*	*Kveþa. öl alda sunum*	*Provide for the sons of men*
9	***1***	***T_8***	***5.2438***	***Heimild***	***Authorization***
7	*2*	*T_7*	*25.2987*	*Slökun*	*Relaxation*
9	*1*	*T_8*	*5.2438*	*Heimild*	*Authorization*
9	***2***	***T_9***	***30.5435***	***Lauslyndi***	***Licentious***
10	*0*	*12*	*5.9660*	*veit. es fleira drekkr. síns*	*Know. he who drinks more. his*
11	*0*	*13*	*5.8824*	*til geþs gumi*	*of his disposition*
11	***1***	***T_{10}***	***11.8424***	***Ölvun***	***Intoxication***
9	*2*	*T_9*	*30.5435*	*Lauslyndi*	*Licentious*
11	*1*	*T_{10}*	*11.8424*	*Ölvun*	*Intoxication*
11	***2***	***T_{11}***	***42.3909***	***Fatlaðir***	***Disabling***
13	*2*	*14*	*4.1134*	*hegri heitr*	*Fowl flutters*
13	*3*	*15*	*2.8115*	*sás of ölþrum*	*Over ale-parties*
12	***1***	***T_{12}***	***6.9249***	***Andi***	*Spirit*
11	*2*	*T_{11}*	*42.3909*	*Fatlaðir*	*Disabled*
12	*1*	*T_{12}*	*6.9249*	*Andi*	*Spirit*
11	***3***	***T_{13}***	***49.3158***	***Meðvitundarlaus***	***Senselessness***
13	*4*	*16*	*6.3428*	*stelr geþi guma þess fugls fjöþdrum ek*	*shoplifting wits men that fowl feathers I*
13	*5*	*18*	*6.1533*	*vask i garþi Gunnlaþar*	*pilfer in garden Gunn attracts*
12	***5***	***T_{14}***	***12.4961***	***Tálbeita***	***Lure***
11	*3*	*T_{13}*	*49.3158*	*Meðvitundarlaus*	*Senselessness*
12	*5*	*T_{14}*	*12.4961*	*Tálbeita*	*Lure*
11	***5***	***T_{15}***	***61.8119***	***Blekking***	***Delusion***
13	*6*	*20*	*4.1134*	*varþ ofrölvi*	*was over-drunk*
13	*7*	*21*	*6.0759*	*at ens fróþa Fjalars*	*in the fold of wise Fjalar*
12	***7***	***T_{16}***	***10.1893***	***Helplessly drukkinn***	***Helplessly Drunk***
11	*8*	*22*	*4.8356*	*; þvi´s ölþr bazt*	*Best is an ale feast*
10	*8*	*23*	*5.3019*	*. at aptr*	*At back*
10	***7***	***T_{17}***	***10.1375***	***Hyggja***	***Hindsight***
12	*7*	*T_{16}*	*10.1893*	*Helplessly drukkinn*	*Helplessly Drunk*
10	*7*	*T_{17}*	*10.1375*	*Hyggja*	*Hindsight*
10	***6***	***T_{18}***	***20.3268***	***Skemmtunar***	***Amusement***
9	*8*	*D*	*0*		
8	*8*	*24*	*7.5852*	*of heimtir hverr sitt geþ gumi*	*of home who has his sense in full wit*
8	***7***	***T_{19}***	***7.5852***	***Kímni***	***Humour***
10	*6*	*T_{18}*	*20.3268*	*Skemmtunar*	*Amusement*
8	*7*	*T_{19}*	*7.5852*	*Kímni*	*Humour*
8	***6***	***T_{20}***	***27.912***	***Auðvelt að fara***	***Easy-going***
11	*5*	*T_{15}*	*61.8119*	*Blekking*	*Delusion*
8	*6*	*T_{20}*	*27.912*	*Auðvelt að fara*	*Easy-going*
8	***5***	***T_{21}***	***89.7239***	***Ánœgja***	***Enjoyment***

7	*8*	*D*	*0*		
6	*8*	*9*	*1.3345*	*Vera (Y).*	*stay (Y).*
6	***7***	***T_{22}***	***1.3345***	***Viðvera***	***Presence***
5	*8*	*D*	*0*		
4	*8*	*11*	*-1.9714*	*fæ´ra (þvit+(veit+. es fleira drekkr. síns)*	*for the more they drink. the less they can think*
4	***7***	***T_{23}***	***-1.9714***	***Ábyrgðar***	***Accountable***
6	*7*	*T_{22}*	*1.3345*	*Viðvera*	*Presence*
4	*7*	*T_{23}*	*-1.9714*	*Ábyrgðar*	*Accountable*
4	***6***	***T_{24}***	***-0.6369***	***Samviska***	***Conscience***
3	*8*	*D*	*0*		
2	*8*	*17*	*-1.7154*	*fjötraþr (hann+vask i garþi Gunnlaþar)*	*Fettered(He pilfer in garden Gunn attracts)*
2	***7***	***T_{25}***	***-1.7154***	***Gildra***	***Trap***
4	*6*	*T_{24}*	*-0.6369*	*Samviska*	*Conscience*
2	*7*	*T_{25}*	*-1.7154*	*Gildra*	*Trap*
2	***6***	***T_{26}***	***-2.3523***	***Skammfeilni***	***Shamefulness***
0	*7*	*D*	*0*		
0	*6*	*19*	*-2.2255*	*Varþ (Olr ek+ varþ ofrölvi at ens fróþa Fjalars)*	*Drunk was I then. I was over-drunk. in the fold of wise Fjalar;*
1	***6***	***T_{27}***	***-2.2255***	***Ákæra***	***Charge***
2	*6*	*T_{26}*	*-2.3523*	*Skammfeilni*	*Shamefulness*
1	*6*	*T_{27}*	*-2.2255*	*Ákæra*	*Charge*
5	***2***	***T_{28}***	***-4.5778***	***sjálf-ánægju***	***Self-satisfaction***
0	*5*	*D*	*0*		
0	*4*	*5*	*-6.7323*	*Betra (án+þykkir þat i ókunnun staþ)*	*Improve(without+think it in unkown places)*
1	***4***	***T_{29}***	***-6.7323***	***Kyrrð***	***Calmness***
5	*2*	*T_{28}*	*-4.5778*	*sjálf-ánægju*	*Self-satisfaction*
1	*4*	*T_{29}*	*-6.7323*	*Kyrrð*	*Calmness*
2	***4***	***T_{30}***	***-11.3101***	***Hóf***	***Moderation***
0	*3*	*D*	*0*		
0	*2*	*4*	*-9.3620*	*Auþi (án+(betra+ án+ þykkir þat i ókunnun staþ))*	*than too deep a draught of ale.*
1	***2***	***T_{31}***	***-9.3620***	***Taumlaust***	***Unbridled***
2	*4*	*T_{30}*	*-11.3101*	*Hóf*	*Moderation*
1	*2*	*T_{31}*	*-9.3620*	*Taumlaust*	*Unbridled*
2	***2***	***T_{31}***	***-20.6721***	***Freisting***	***Temptation***
8	*5*	*T_{21}*	*89.7239*	*Ánægja*	*Enjoyment*
2	*2*	*T_{31}*	*-20.6721*	*Freisting*	*Temptation*
3	***3***	***T_{32}***	***69.0518***	***Sæla***	***Bliss***

Table A4
Transformation of the Alpha Variables

Var	*Rad*	*Var*	*Rad*	*Var*	*Rad*	*Var*	*Rad*
1	4.082	10	5.5892	*T14*	*9.6336*	*T22*	*24.3452*
2	4.082	**T8**	**5.5892**	*T15*	*7.1876*	*T17*	*56.7997*
T1	**8.164**	*T7*	*23.4264*	**T16**	**16.8212**	**T23**	**81.1449**
D	0	*T8*	*5.5892*	*T16*	*16.8212*	D	0
3	3.8622	**T9**	**29.0159**	*T13*	*39.9785*	18	1.2628
T2	**3.8622**	12	3.5188	**T17**	**56.7997**	**T24**	**1.2628**
T1	*8.164*	**T10**	**7.4438**	*19*	*3.925*	D	0
T2	*3.8622*	D	0	*20*	*3.925*	5	1.0639
T3	**12.0262**	13	3.5188	**T18**	**7.85**	**T25**	**1.0639**
D	0	**T11**	**3.5188**	21	4.1238	*T24*	*1.2628*
4	4.1398	*T10*	*7.4438*	22	4.1238	*T25*	*1.0639*
T4	**4.1398**	*T11*	*3.5188*	**T19**	**8.2476**	**T26**	**2.3267**
T3	*12.0262*	**T12**	**10.9626**	*T18*	*7.85*	6	-1.2813
T4	*4.1398*	*T9*	*29.0159*	*T19*	*8.2476*	*7*	-1.2813
T5	**16.1660**	*T12*	*10.9626*	**T20**	**16.0976**	**T27**	**-2.5626**
8	3.6110	**T13**	**39.9785**	23	4.1238	*T26*	*2.3267*
9	3.5997	14	3.6738	24	4.1238	*T27*	*-2.5626*
T6	**7.2107**	15	5.9598	**T21**	**8.2476**	**T28**	**-0.2359**
T5	*16.1660*	**T14**	**9.6336**	*T20*	*16.0976*	*T28*	*-0.2359*
T6	*7.2107*	16	3.5796	*T21*	*8.2476*	*T23*	*81.1449*
T7	**23.4264**	17	3.6080	**T22**	**24.3452**	**T29**	**80.909**
D	0	**T15**	**7.1876**				

Table A5
Extraction of Termini from the O-mesh

X	*Y*	*A-component Pendulum*	*O-component Destination*	*English Extraction*	*Fusion Value (q)*
1	1	T_1: 1 → 2	T_{O1}	Inhuman Load	8.164
3	1	T_2: D → 3	T_{O2}	Inferior Preparedness	3.8622
3	2	T_3: T_{A2} → T_{A1}	T_{O3}	Calamity	12.0262
5	1	T_4: D → 4	T_{O30}	Unbridled	4.1398
5	2	T_5: T_{A4} → T_{A3}	T_{O5}	Mood	16.166
7	1	T_6: 8 → 9	T_{O22}	Presence	7.2107
7	2	T_7: T_{A6} → T_{A5}	T_{O7}	Relaxing	23.4264
9	1	T_8: D → 10	T_{O8}	Authorization	5.5892
9	2	T_9: T_{A8} → T_{A7}	T_{O9}	Licentious	29.0159
11	1	T_{10}: 11 → 12	T_{O10}	Intoxication	7.4438
12	2	T_{11}: D → 13	T_{O10}	Intoxication	3.5188
11	2	T_{12}: T_{A11} → T_{A10}	T_{O10}	Intoxication	10.9626
11	3	T_{13}: T_{A12}: → T_{A9}	T_{O11}	Disabling	39.9285
13	4	T_{14}: 14 → 15	T_{O12}	Spirit	9.6336
12	6	T_{15}: 16 → 17	T_{O25}	Trap	7.1876
11	6	T_{16}: T_{A15} → T_{A14}	T_{O14}	Lure	16.8212
10	6	T_{17}: T_{A16} → T_{A13}	T_{O15}	Delusion	56.7997

8	7	T_{18}: 19 → 20	T_{O16}	Helplessly Drunk	7.85
6	7	T_{19}: 21 → 22	T_{O17}	Hindsight	8.2476
6	6	T_{20}: T_{A19} → T_{A18}	T_{O20}	Easy-going	16.0976
5	7	T_{21}: 23 → 24	T_{O19}	Humour	8.2476
4	6	T_{22}: T_{A21} → T_{A20}	T_{O20}	Easy-going	24.3452
4	5	T_{23}: T_{A22} → T_{A17}	T_{O18}	Amusement	81.1449
2	7	T_{24}: D → 18	T_{O14}	Lure	1.2628
0	5	T_{25}: D → 5	T_{O29}	Calmness	1.0639
2	5	T_{26}: T_{A25} → T_{A24}	T_{O26}	Shamefulness	2.3267
6	7	T_{27}: 6 → 7	T_{O4}	Insecurity	-2.5626
6	6	T_{28}: T_{A27} → T_{A26}	T_{O28}	Self-satisfaction	-0.2359
6	5	T_{29}: T_{A28} → T_{A23}	T_{O24}	Conscience	80.909